Claims

1. Filter device (1) comprising a bonded network of graphitized carbon for molten steel filtration characterized by the presence of at least two sieve plates (2,4) spaced apart to each other, in particular providing a reservoir chamber 7.

2. Device (1) according to claim 1, characterized in that at least one of the surfaces (6,6a) of said sieve plates (2,4) facing together has a surface corrugation in the range of 0.1 mm to 10 mm, in particular 1 mm to 5 mm.

3. Device (1) according to claim 1 or 2, characterized that the through holes (3,3a) of the respective sieves plates (2,4) are spaced laterally to each other.

4. Device (1) according to one of claims 1 to 3, characterized in that the diameter of the through holes (3,3a) of the respective sieve plates (2,4) is in the range of 1 to 10 mm, in particular 2 to 5 mm.

5. Device (1) according to one of claims 1 to 4, characterized in that the geometry of the through holes (3,3a) of said sieve plates (2,4) is circular, ellipitical, triangular, square, rectangular, pentagonal or hexagonal.

6. Device (1) according to one of claims 1 to 5, characterized in that the geometry of each of the sieve plates (2,4) is identical.

7. Device (1) according to one of claims 1 to 6, characterized in that the filter is made of ceramic raw material, in particular made of ceramic

material comprising a network of graphitized carbon and optionally reinforcing fibers.

8. A method to produce a filter device (1) according to one of claims 1 to 7 comprising the steps

a) pressing a semi-damp mixture comprising ceramic powder and optionally a graphitizable bonding precursor, fibers and other additives in a hydraulic press to obtain a perforated sieve plate (2,4) in the shape of a disk with a protruding frame (5,5a), with a corrugated surface (6,6a) (peaks and trough) of at least one of the inside surfaces (6,6a) of the sieve plate (2,4) ,

b) joining two sieve plates (2,4) to each other using a ceramic or carbon binder so that a space or reservoir chamber is formed between the two plates (2,4) and

c) firing the assembled filter device (1) in reducing or non-oxidising atmosphere to a temperature up to 1000 °C , preferably between 600 °C and 700 °C.

9. The method according claim 8 characterized in that the surface (6,6a) is roughened in a further step prior or after the firing of the sieve plate (2,4).

10. The method according to claim 8 or 9 characterized in that said ceramic precursor material contains a graphitizable carbon bonding precursor, ceramic powder, and optionally other additives.

11. The method according anyone of claims 8 to 10, characterized in that said precursor is fired at a temperature in the range of 500 to 2000 °C, in particular 500 to 1000 °C.